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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/753,399	01/09/2004	Peter Tiemang	32860-000379/US/DVA	7897

30593 7590 03/12/2008  
HARNESS, DICKEY & PIERCE, P.L.C.  
P.O. BOX 8910  
RESTON, VA 20195

EXAMINER
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KERNS, KEVIN P

ART UNIT	PAPER NUMBER
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1793

MAIL DATE	DELIVERY MODE
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03/12/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/753,399	<b>Applicant(s)</b> TIEMANG, PETER	
	<b>Examiner</b> Kevin P. Kerns	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 16, 17 and 21-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16, 17 and 21-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 10/204,692.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 16, 17, and 21-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Frasier (US 5,810,552).

Frasier (col. 4, lines 58+) teaches the claimed cast workpiece including airfoil for a gas turbine engine such as a blade and a vane having thin wall structures and hollow airfoil with thin film cooling (col. 9, lines 29+), comprising three-dimensional grid structure or an integral structure in Fig. 8, having cooling passageways and high thermal conductivity material such as NiAl rods 30'. The cast structure includes very thin walls of 0.03 inches (col. 3, lines 62+) and passageways interposed between a pair of walls of about a quarter of the wall area and forming the hollow airfoils with thin film cooling. A single-cast investment casting method is used to cast a component including one of a vane and a blade in a turbine assembly, comprising making a multi-wall ceramic core coupled or bonded with high thermal conductivity material such as NiAl rods which can withstand casting and have a diameter of 0.09 to 0.55 inches (col. 6, lines 49+) for casting and removing the cores to obtain the final cast including an airfoil for a gas turbine engine, thin wall structures and hollow airfoil with thin film cooling, wherein the passageway having a width or radius of 0.005 to 0.015 inches (col. 6, lines

22+), such that passages having non-uniform lengths and branches are produced from the plurality of casting cores. Therefore, it is the examiner's position that the cast workpiece comprising a three-dimensional grid structure or an integral structure having the cooling passageway produced by Frasier will provide the same function of cooling.

### ***Response to Arguments***

3. The examiner acknowledges the applicant's amendment received by the USPTO on December 11, 2007. The applicant's response overcomes prior claim objections and 35 USC 112, 2<sup>nd</sup> paragraph rejections. The applicant has added new claims 35-37. Claims 16, 17, and 21-37 are currently under consideration in the application.

4. Applicant's arguments filed December 11, 2007 have been fully considered but they are not persuasive.

With regard to the applicants' remarks/arguments on pages 8-11 of the amendment, it is noted that the newly underlined portions in above section 2 (the 35 USC 102(b) rejections in view of Frasier) are provided in response to the applicant's new claims 35-37. Importantly, the applicant is claiming a workpiece produced by a casting process, and the applicant states (on page 8 of the remarks/arguments) that "the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product". Regarding independent claims 16, 27, and 35-37, however, the applicant does not provide sufficient structural features to these product claims, nor does the applicant provide any evidence to support this statement. In

paragraph [0031] of the specification, the applicant discloses that the casting cores that “rest loosely against one another” are to be “leached out” of the workpiece. In other words, the “workpiece” as claimed would not comprise any casting core(s) -- whether a single core or multiple cores of various arrangements within the mold cavity, as only a plurality of branching passages defined by the core(s) would remain. Such a core removal process to obtain the multiple branching passages is disclosed by Frasier, who also discloses a three-dimensional grid of interconnecting passages in the wall of the workpiece (of independent claim 27). As a result, the casting cores of independent claims 16 and 35-37 do not impart any structurally distinct patentable weight to these workpiece claims, as only the passages formed within the workpiece are given patentable weight. Although the applicant refers to the (capillary-type) passages in Figure 3 of the application, the “passages” as claimed by the applicant (being much broader than what is shown in Figure 3) would be formed by the plural cores of Frasier. It is the examiner's position that the workpiece of Frasier is identical to or only slightly different than the claimed workpiece prepared by the method of the claim(s), because both workpieces include structural similarities, including three-dimensional grids of interconnecting passageways formed by core removal, as set forth in independent claims 16, 27, and 35-37. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different

process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show unobvious differences between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983). Frasier either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted Declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the teachings of Frasier.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,712,120 (issued from parent application 10/204,692) is also cited in PTO-892.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571)272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin P. Kerns  
Primary Examiner  
Art Unit 1793

/Kevin P. Kerns/  
Primary Examiner, Art Unit 1793  
February 25, 2008